



MASSACHUSETTS

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Medical Policy

Polysomnography and Home Sleep Testing

Table of Contents

- [Policy: Commercial](#)
- [Description](#)
- [Information Pertaining to All Policies](#)
- [Authorization Information](#)
- [Policy History](#)
- [Endnotes](#)
- [Coding Information](#)
- [References](#)

Policy Number: 525

BCBSA Reference Number: NA

Related Policies

- **Medicare Advantage: High-Technology Radiology and Sleep Disorder Management Clinical and Utilization Guidance Redirect, #[923](#)**
- Actigraphy, #[533](#)
- Bi-Level Positive Airway Pressure (BPAP) Devices, #[527](#)
- Home Cardiorespiratory Monitoring, #[224](#)
- Management of Obstructive Sleep Apnea (OSA) Oral Appliances, #[529](#)
- Management of Obstructive Sleep Apnea (OSA) using Auto-Titrating Positive Airway Pressure (APAP) and Continuous Positive Airway Pressure (CPAP) Devices, #[526](#)
- Multiple Sleep Latency Testing (MSLT) and Maintenance of Wakefulness Testing (MWT), #[534](#)
- Surgical Treatment of Snoring and Obstructive Sleep Apnea Syndrome, #[130](#)

Policy¹

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity

Indications for Home (Unattended) Sleep Studies

Note: Home sleep studies performed with Type II and Type III devices (as defined below under the description) and devices which utilize the combination of peripheral arterial tone (PAT), actigraphy, EKG/heart rate and oxygen saturation may be considered **MEDICALLY NECESSARY** when the criteria below are met. Type IV devices not meeting this description are considered to be **NOT MEDICALLY NECESSARY** in all clinical scenarios.

Suspected OSA:

Home sleep studies may be considered **MEDICALLY NECESSARY** if the patient meets any of the following criteria (1–3) **AND** has no contraindication to a home sleep study as outlined in table 1 below:

1. Observed apneas during sleep; **OR**
2. A combination of **at least two (2)** of the following (a–e):

- a. Excessive daytime sleepiness evidenced by an Epworth sleepiness scale score greater than 10, inappropriate daytime napping (e.g., during driving, conversation, or eating), or sleepiness that interferes with daily activities and is not explained by other conditions;
 - b. Habitual snoring, or gasping/choking episodes associated with awakenings;
 - c. Treatment-resistant hypertension (persistent hypertension in a patient taking three or more antihypertensive medications);
 - d. Obesity, defined as a body mass index greater than 30 kg/m² or increased neck circumference defined as greater than 17 inches in men or greater than 16 inches in women;
 - e. Craniofacial or upper airway soft tissue abnormalities, including adenotonsillar hypertrophy, or neuromuscular disease; **OR**
3. History of stroke (greater than 30 days previously) transient ischemic attack, coronary artery disease, or sustained supraventricular tachycardic or bradycardic arrhythmias in patients who meet one of the criteria in 2a–e above.

Established OSA - follow-up home sleep studies:

A patient with established diagnosis of OSA should have a follow-up home sleep study if either of the following applies **AND** there is no contraindication to a home sleep study as outlined in table 1 below:

1. To assess efficacy of surgery (including adenotonsillectomy or upper airway) or oral appliances/devices; **OR**
2. To re-evaluate the diagnosis of OSA and need for continued CPAP if there is a significant weight loss (defined as 10% of body weight) since the most recent sleep study.

Table 1: **Contraindications to Home Sleep Study**

1. Patient is 18 years old or younger
2. Moderate or severe chronic obstructive pulmonary disease (COPD) – Forced expiratory volume in 1 second/Forced vital capacity (FEV1/FVC) less than or equal to 0.7 and FEV1 less than 80% of predicted
3. Moderate or severe congestive heart failure (CHF) – New York Heart Association (NYHA) class III or IV
4. CHF with a history of ventricular fibrillation or sustained ventricular tachycardia in a patient who does not have an implanted defibrillator
5. Cognitive impairment (inability to follow simple instructions) resulting in inability to apply the home sleep testing equipment when another individual is not available to assist with this task
6. Physical impairment resulting in inability to apply the home sleep testing equipment when another individual is not available to assist with this task
7. The patient has a suspected or established diagnosis of one of the following conditions: (a) Central Sleep Apnea, (b) Periodic Limb Movement Disorder (PLMD), (c) Narcolepsy, (d) Idiopathic Hypersomnia, (e) Parasomnia (except bruxism and somniloqui [sleep talking]), (f) Nocturnal Seizures – In order to support the suspicion of PLMD in this context, one of the following (i-vi) must be documented: (i) Pregnancy, (ii) Renal failure, (iii) Iron deficiency anemia, (iv) Peripheral neuropathy, (v) Use of antidepressant or antipsychotic medications, or (vi) Continued hypersomnia and clinical symptoms of PLMD after sleep disordered breathing is ruled out by home sleep testing
8. Previous technically suboptimal home sleep study (2 nights of study attempted when the reason for the suboptimal study is likely to recur on a second attempt or when the study remains suboptimal after 2 nights have been attempted)
9. Previous 2-night home sleep study which did not diagnose OSA in a patient with ongoing clinical suspicion of OSA
10. Patient is oxygen dependent for any reason
11. History of cerebrovascular accident (CVA) within the preceding 30 days
12. Chronic opiate narcotic use; when discontinuation is not an option. Diagnostic sleep testing for patients using opiate narcotics for acute self-limited conditions, should ideally be deferred until the medications have been stopped

13. Body Mass Index (BMI) > 33 and elevated serum bicarbonate level (>28 mmol/L)
14. Established diagnosis of obesity hypoventilation syndrome defined as a body mass index (BMI) >30 kg/m² and hypoventilation which cannot be solely attributed to other conditions such as pulmonary disease, skeletal restriction, neuromuscular weakness, hypothyroidism, pleural pathology or medications. Documentation of hypoventilation requires either an increase in arterial PCO₂ (or surrogate measure) to >55 mmHg for at least 10 minutes or a >10 mmHg increase in arterial PCO₂ (or surrogate measure) during sleep (compared to an awake supine value) to a value exceeding 50 mmHg for at least 10 minutes.

Indications for In-Lab (Attended) Sleep Studies in Adult Patients (Age 19 Years or Older)

Suspected OSA (in patients with unspecified sleep apnea and nocturnal desaturation, OSA should be suspected and excluded if clinically appropriate):

An in-lab sleep (attended) study may be considered **MEDICALLY NECESSARY** if the patient meets any of the following criteria (1–3) **AND** has a contraindication to a home sleep study (as listed in table 1 above):

1. Observed apneas during sleep; **OR**
2. A combination of at least two (2) of the following (a–e):
 - a. Excessive daytime sleepiness evidenced by an Epworth sleepiness scale score greater than ten (10), inappropriate daytime napping (e.g., during driving, conversation, or eating), or sleepiness that interferes with daily activities and is not explained by other conditions;
 - b. Habitual snoring or gasping/choking episodes associated with awakenings;
 - c. Treatment-resistant hypertension (persistent hypertension in a patient taking three or more antihypertensive medications);
 - d. Obesity, defined as a body mass index greater than 30 kg/m² or increased neck circumference defined as greater than seventeen (17) inches in men or greater than sixteen (16) inches in women;
 - e. Craniofacial or upper airway soft tissue abnormalities, including adenotonsillar hypertrophy, or neuromuscular disease; **OR**
3. History of stroke, transient ischemic attack, coronary artery disease, or sustained tachycardic or bradycardic arrhythmias in patients who meet one of the criteria in 2a–e above.

Suspected sleep disorder other than OSA

An in-lab supervised sleep study may be considered **MEDICALLY NECESSARY** when there is suspicion of any of the following (1-7):

1. Central sleep apnea
2. Narcolepsy
3. Nocturnal seizures
4. Parasomnia
5. Idiopathic hypersomnia
6. Periodic limb movement disorder (PLMD) – In order to support the suspicion of PLMD in this context, one of the following (i-vi) must be documented: (i) Pregnancy, (ii) Renal failure, (iii) Iron deficiency anemia, (iv) Peripheral neuropathy, (v) use of antidepressant or antipsychotic medications, or (vi) continued hypersomnia and clinical symptoms of PLMD after sleep disordered breathing is ruled out by home sleep testing
7. Nocturnal desaturation (due to severe COPD or certain restrictive thoracic disorders) or unexplained right heart failure, polycythemia, cardiac arrhythmias during sleep or pulmonary hypertension.

Established sleep disorder (OSA or other): follow-up laboratory studies:

A patient with established diagnosis of OSA or other sleeping disorders should have a follow-up in-lab sleep study if either of the following (1 or 2) applies **AND** the patient has a contraindication to a home sleep study (as listed in table 1 above):

1. To assess efficacy of surgery (including adenotonsillectomy or upper airway) or oral appliances/devices; **OR**
2. To re-evaluate the diagnosis of OSA and need for continued CPAP if there is significant weight loss (defined as 10% of body weight) since the most recent sleep study

A patient with established diagnosis of OSA or other sleeping disorders should have a follow-up in-lab study if any of the following (1-3) applies

1. To titrate CPAP/BPAP in a patient who has a contraindication to the use of APAP (e.g., CHF, COPD) or for whom an attempt at APAP titration has been unsuccessful; **OR**
2. To titrate CPAP/BPAP in a patient with a contraindication to the use of APAP (e.g., CHF, COPD) whose attempted split-night study did not adequately establish appropriate CPAP/BPAP treatment parameters; **OR**
3. To re-titrate CPAP/BPAP in a patient who has a contraindication to APAP (e.g., CHF, COPD) and has recurrence of symptoms or worsening of symptoms during treatment with CPAP/BPAP.

Indications for In-Lab (Attended) Sleep Studies in Non-Adult Patients (Age 18 Years or Younger)

Suspected sleep disorder (OSA or other)

An in-lab sleep (attended) study may be considered **MEDICALLY NECESSARY** if the patient meets any of the following criteria 1–11 below:

1. Habitual snoring in association with one or more of criteria a–e below:
 - a. Restless or disturbed sleep
 - b. Behavioral disturbance or learning disorders including deterioration in academic performance, attention deficit disorder, hyperactivity
 - c. Frequent awakenings
 - d. Enuresis (bedwetting)
 - e. Growth retardation or failure to thrive; **OR**
2. Excessive daytime somnolence or altered mental status not explained by other conditions; **OR**
3. Polycythemia not explained by other conditions; **OR**
4. Cor pulmonale not explained by other conditions; **OR**
5. Witnessed apnea with duration greater than two (2) respiratory cycles; **OR**
6. Labored breathing during sleep; **OR**
7. Hypertrophy of the tonsils or adenoids in patients at significant surgical risk such that the exclusion of OSA would allow avoidance of surgery; **OR**
8. Suspected congenital central alveolar hypoventilation syndrome or sleep-related hypoventilation due to neuromuscular disease or chest wall deformities; **OR**
9. Clinical evidence of a sleep-related breathing disorder in infants who have experienced an apparent life-threatening event; **OR**
10. For exclusion of OSA in a patient who has undergone adenotonsillectomy for suspected OSA more than eight (8) weeks previously; **OR**
11. The initial study was inadequate, equivocal or non-diagnostic and the child's parents or caregiver report that the breathing patterns observed at home were different from those during testing.

Established Sleep Disorder (OSA or other) – follow up studies

A follow-up in-lab sleep study may be considered **MEDICALLY NECESSARY** in any of the following (1–5) situations:

1. A patient with established OSA continues to exhibit persistent snoring or other symptoms of sleep disordered breathing despite treatment with positive airway pressure therapy; **OR**
2. The patient has undergone adenotonsillectomy more than eight (8) weeks previously for management of established OSA; **OR**
3. To re-evaluate the diagnosis of OSA and need for continued PAP if there is significant weight loss (defined as 10% of body weight) since the most recent sleep study; **OR**

4. To titrate CPAP or BPAP in a patient whose diagnostic study confirms that the patient is a candidate for positive airway pressure therapy and split-night study has not been performed or was inadequate;
OR
5. The initial sleep study has led to a diagnosis other than OSA and the repeat study is requested because of a change in clinical status or to assess efficacy after a change in therapy.

Prior Authorization Information

Inpatient

- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed **inpatient**.

Outpatient

- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed **outpatient**.

	Outpatient
Commercial Managed Care (HMO and POS)	The requirements of BCBSMA Sleep Management Program may require a precertification/prior authorization via AIM Specialty Health. These requirements are member-specific:
Commercial PPO and EPO	<p>Please verify member eligibility and requirements through Online Services by logging onto Provider Central. Refer to our Quick Tip for an overview of precertification and prior authorization requirements.</p> <p>Ordering clinicians should request pre-certification from AIM Specialty Health or call 1-866-745-1783 (when applicable).</p> <p>Prior authorization information for Medicare HMO Blue and Medicare PPO Blue is addressed in medical policy #923, High Technology Radiology and Sleep Disorder Management for Medicare Advantage Products.</p>
Indemnity	Prior authorization is not required.

CPT Codes / HCPCS Codes / ICD Codes

Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following codes are included below for informational purposes only; this is not an all-inclusive list.

CPT Codes

CPT codes:	Code Description
95782	Polysomnography; younger than 6 years, sleep staging with 4 or more additional parameters of sleep, attended by a technologist
95783	Polysomnography; younger than 6 years, sleep staging with 4 or more additional parameters of sleep, with initiation of continuous positive airway pressure therapy or bi-level ventilation, attended by a technologist
95800	Sleep study, unattended simultaneous recording heart rate, oxygen saturation, respiratory analysis (e.g., by airflow or peripheral arterial tone), and sleep time
95801	Sleep study, unattended, simultaneous recording; minimum of heart rate, oxygen saturation and respiratory analysis (e.g., by airflow or peripheral arterial tone)

95806	Sleep study, unattended, simultaneous recording of heart rate, oxygen saturation, respiratory airflow, and respiratory effort (e. g., thoracoabdominal movement)
95807	Sleep study, simultaneous recording of ventilation, respiratory effort, ECG or heart rate, and oxygen saturation, attended by a technologist
95808	Polysomnography; sleep staging with 1–3 additional parameters of sleep, attended by a technologist
95810	Polysomnography; sleep staging with 4 or more additional parameters of sleep, attended by a technologist
95811	Polysomnography; sleep staging with 4 or more additional parameters of sleep, with initiation of continuous positive airway pressure therapy or bi-level ventilation, attended by a technologist

HCPCS Codes

HCPCS codes:	Code Description
G0398	Home sleep study with type II portable monitor, unattended; minimum of 7 channels: EEG, EOG, EMG, ECG/heart rate, airflow, respiratory effort and oxygen saturation
G0399	Home sleep study with type III portable monitor, unattended; minimum of 4 channels: 2 respiratory movement/airflow, 1 ECG/heart rate and 1 oxygen saturation
G0400	Home sleep study with type IV portable monitor, unattended; minimum of 3 channels

Description

This policy is applicable to performance of lab based sleep studies (polysomnography) and home based sleep studies for the following disorders:

- Obstructive sleep apnea (OSA) - the most common of the sleep disorders
- Central sleep apnea (CSA)
- Narcolepsy
- Parasomnias and related sleep movement disorders including:
 - Confusion arousals
 - Somnambulism (sleepwalking)
 - Sleep terrors
 - Rapid eye movement (REM) sleep behavior disorder
 - Sleep-related epilepsy
 - Sleep bruxism
 - Sleep enuresis (bed wetting)
 - Periodic limb movement disorder (PLMD)
- Nocturnal oxygen desaturation

Obstructive sleep apnea (OSA) is a common disorder affecting up to 2–4% of the population. Many patients with OSA remain undiagnosed. OSA is characterized by repeated interruption of breathing during sleep (apnea) or by episodes of diminished airflow to the lungs (hypopnea). These episodes are the result of narrowing or closure of the upper airway during sleep. The clinical hallmarks of OSA are reported loud snoring or apnea during sleep (if the patient has a bed partner), or patient complaints of frequent awakenings with gasping or choking. This fragmentation of sleep leads to daytime sleepiness and other symptoms including morning headache, poor concentration, memory impairment, irritability, decreased libido, and nocturia. Although OSA may occur in all age groups, it is most common in patients between 40 and 70 years old. The incidence of OSA in obese patients is considerably higher than in non-obese individuals. OSA is associated with higher mortality because patients with OSA are more likely to have cardiac arrhythmias, coronary artery disease, congestive heart failure, stroke, diabetes, and treatment refractory hypertension. Because of daytime sleepiness, deaths related to motor vehicle accidents are also more common in patients with OSA.

Diagnosis of OSA: Although OSA may be suspected based on the symptoms described above, physical exam findings (e.g., obesity, increased neck circumference, retrognathia etc.), or presence of comorbidities, the diagnosis must be confirmed by a sleep test. During sleep testing, various physiological parameters are monitored while the patient sleeps. Sleep testing may be performed at a hospital, a freestanding sleep lab or at the patient's home. Regardless of the location at which the service is performed, diagnostic sleep tests should be reported by a physician.

Sleep testing may be classified as follows:

Type I: An attended sleep study performed in a hospital or freestanding sleep lab with continuous and simultaneous monitoring of electroencephalogram (EEG), electrooculogram (EOG), electrocardiogram (EKG), electromyogram (EMG), oxygen saturation, respiratory effort, and airflow. Type I studies are also known as polysomnography (PSG).

Type II: A sleep study (usually unattended) performed with portable equipment with continuous and simultaneous monitoring of EEG, EOG, EKG, EMG, oxygen saturation, respiratory effort, and airflow. Type II studies are similar to type I (PSG) studies except that the former are usually performed in the home.

Type III: An unattended sleep study performed with portable equipment with monitoring of a minimum of four channels: 2 respiratory movement/airflow, 1 ECG/heart rate and 1 oxygen saturation. The studies are performed in the home and differ from types I and II in that they do not provide data on sleep staging.

Type IV: An unattended sleep study performed with portable equipment with monitoring of three or fewer physiological parameters only one of which is airflow. The studies are performed in the home and differ from types I and II in that they do not provide data on sleep staging.

Home sleep studies offer an alternative to PSG for some patients with suspected OSA. This option is more comfortable and convenient for the patient, is less costly and more readily available in regions where the demand for PSG is high. Multiple night home sleep studies may be indicated in some situations. Patients who are 18 years old or less and those with severe chronic obstructive pulmonary disease (COPD), advanced congestive heart failure (CHF), neuromuscular diseases and/or cognitive impairment are not suitable candidates for home sleep studies. Patients with sleep disorders other than OSA are not suitable candidates for home sleep testing.

Regardless of the site of testing, sleep studies objectively measure the degree of respiratory disturbance during sleep. Episodes of **apnea** (cessation of breathing lasting at least 10 seconds and **hypopnea** (reduction, but not a cessation of air exchange, with an associated fall in oxygen saturation [at least 3% to 4%] or arousal) are recorded. The apnea/hypopnea index (AHI) is the average number of apneic and hypopneic episodes per hour based on a minimum of two hours of recording.

The respiratory disturbance index (RDI), a similar (but not identical) parameter, is the average number of apneic, hypopneic and respiratory effort related arousals (RERAS) per hour based on at least two hours of recording. For the purposes of this guideline the terms AHI and RDI can be used interchangeably.

The severity of OSA is graded as follows in adult (age 19 years or older) patients:

Mild OSA:	AHI = 5–14
Moderate OSA:	AHI = 15–30
Severe OSA:	AHI = greater than 30

OSA presentation in children: The presentation of OSA in children may differ from that of adults. Children frequently exhibit behavioral problems or hyperactivity rather than daytime sleepiness, and AHI greater than 15 is considered severe.

Treatment of OSA: Positive airway pressure (PAP), resulting in pneumatic splinting of the airway, is the mainstay of treatment of OSA. The pressure provided throughout the respiratory cycle may be constant (CPAP) or may vary between inspiration and expiration (bi-level CPAP or BPAP). Automatically titrating positive airway pressure (APAP) supplies variable pressure in response to changes in various parameters e.g., sleeping position, sleep stage or changes in body habitus.

Although some patients may prefer APAP or BPAP to CPAP, use of APAP or BPAP has not increased compliance with therapy.

For patients requiring treatment with CPAP or BPAP, pressure levels need to be titrated to each patient's particular needs. For patients whose diagnostic sleep study is performed in a lab setting, it may be possible to diagnose OSA and perform the titration study in a single night. This approach, known as split-night study, may be used when AHI exceeds 20 per hour based on the first 2 hours of testing. Those who do not meet criteria for split-night protocol require either a second overnight titration study or temporary use APAP as a means of titrating CPAP. Titration is not required if APAP is selected as the long-term therapeutic approach. Oral appliances (OA) which include mandibular repositioning appliances (MRA) and tongue retaining devices (TRD) may be used in appropriately selected patients. Other treatments for OSA (not addressed in this guideline) include positional therapy, non-surgical weight loss measures, or bariatric surgery. Surgical approaches to modification of the upper air way are usually reserved for those patients who have not responded to or tolerated other therapies. Tracheostomy should be considered when other measures fail and OSA is deemed severe enough to warrant this procedure. Adenotonsillectomy is the preferred initial approach to treatment of OSA in children. CPAP is reserved for those children who have an inadequate response to surgery, do not have enlarged tonsils or are not good surgical candidates.

In the management of patients with OSA, long-term compliance with positive airway pressure devices remains problematic. Adherence to therapy is defined by the Centers for Medicare & Medicaid Services (CMS) as use of PAP for greater than or equal to 4 hours per night on 70% of nights during a consecutive thirty (30) day period. Compliance may be as low as 50% at one year and for this reason compliance monitoring is an important component of the management of patients with OSA. Every effort should be made to achieve compliance. Newer PAP devices record (and may transmit) use times such that compliance monitoring may be performed remotely. Unless compliance is achieved and documented, the continued use of PAP devices (and the ongoing provision of associated supplies) cannot be considered to be medically necessary.

Policy History

Date	Action
1/2018	Prior authorization information for Medicare HMO Blue and Medicare PPO Blue removed. Prior authorization information for Medicare HMO Blue and Medicare PPO Blue is addressed in medical policy #923, High Technology Radiology and Sleep Disorder Management for Medicare Advantage Products. 1/1/2018
11/2017	Medically necessary criteria revised. Effective 11/20/2017. Based on AIM Sleep Disorder Management Diagnostic & Treatment Guidelines. Effective Date: November 20, 2017.
5/2017	Prior Authorization Information clarified. 5/1/2017
2/2017	Treatment-resistant hypertension clarified. Covered indications clarified. 2/2/2017 AIM Sleep Disorder Management Diagnostic & Treatment Guidelines. Effective 1/1/2016.
7/2014	Updated Coding section with ICD10 procedure and diagnosis codes, effective 10/2015.
10/2013	Indications and contraindications clarified. Effective 10/1/2013.
7/2013	Adopted AIM Program Guidelines on Sleep Disorder Management, January 2013 Version V1.3. Effective 7/1/2013.
2/2013	BCBSA National medical policy review. Changes to policy statements. Effective 2/4/2013.
1/2013	Updated to add new CPT code 95782 and 95783.
11/2011-4/2012	Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.
12/2011	BCBSA National medical policy review. Changes to policy statements.
4/2011	Reviewed - Medical Policy Group - Cardiology and Pulmonology. No changes to policy statements.
3/2011	Reviewed - Medical Policy Group - Allergy and ENT/Otolaryngology.

	No changes to policy statements.
7/2010	BCBSA National medical policy review. Changes to policy statements.
9/1/2010	BCBSA National medical policy review. Changes to policy statements.
6/2010	BCBSA National medical policy review. Changes to policy statements.
5/2010	BCBSA National medical policy review. Changes to policy statements.
3/2010	Reviewed - Medical Policy Group - Allergy and ENT/Otolaryngology. No changes to policy statements.
5/2009	Updated prior authorization information.
3/2009	Reviewed - Medical Policy Group - Allergy and ENT/Otolaryngology. No changes to policy statements.
3/2008	BCBSA National medical policy review. Changes to policy statements.
5/2007	Updated coverage and non coverage guidelines for oral appliances for sleep apnea.
3/2007	Reviewed - Medical Policy Group - Allergy and ENT/Otolaryngology. No changes to policy statements.
2/2007	BCBSA National medical policy review. Changes to policy statements.

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

[Medical Policy Terms of Use](#)

[Managed Care Guidelines](#)

[Indemnity/PPO Guidelines](#)

[Clinical Exception Process](#)

[Medical Technology Assessment Guidelines](#)

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Specialty Society Guidelines and Systematic Reviews

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Endnotes

¹ Based on AIM Specialty Health: Sleep Disorder Management Diagnostic & Treatment Guidelines Program.